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IN THE CLAIMS

Please cancel claims 27 – 38 without prejudice.

Presented below are the amended claims in a clean, unmarked format.

11. A catheter comprising:

a mandrel comprised of a variable stiffness, non-metal material, said mandrel uniformly tapered from a proximal section to a distal section, and said mandrel adapted to reinforce said catheter.

12. The catheter of claim 11 wherein said material is selected from the group consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

13. The catheter of claim 11 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.

14. The catheter of claim 11 further comprising an inflatable member comprising a proximal portion and a distal portion, wherein said distal section of said mandrel extends past said proximal portion of said inflatable member.

15. The catheter of claim 14 wherein said distal section of said mandrel extends past said distal portion of said inflatable member.

16. The catheter of claim 11, wherein said mandrel is formed by annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section.

17. The catheter of claim 11, wherein said mandrel is formed by necking at high temperatures such that said proximal section is stiffer than said distal section.

18. The catheter of claim 11, wherein said mandrel is formed by taper extruding such that said proximal section is stiffer than said distal section.

19. A catheter comprising:

an outer member;

a hollow inner member extending through said outer member;

an outer lumen between said inner and outer members; and

a mandrel extending through said outer lumen, said mandrel comprised of a variable stiffness, non-metal material, said mandrel uniformly tapered from a proximal section to a distal section, and said mandrel is adapted to reinforce said catheter.

20. The catheter of claim 19 wherein said material is selected from the group consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

21. The catheter of claim 19 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.

22. The catheter of claim 19 further comprising an inflatable member comprising a proximal portion and a distal portion, wherein said distal section of said mandrel extends past said proximal portion of said inflatable member.

23. The catheter of claim 22 wherein said distal section of said mandrel extends past said distal portion of said inflatable member.

24. The catheter of claim 19, wherein said mandrel is formed by annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section.

25. The catheter of claim 19, wherein said mandrel is formed by necking at high temperatures such that said proximal section is stiffer than said distal section.

26. The catheter of claim 19, wherein said mandrel is formed by taper extruding such that said proximal section is stiffer than said distal section.

39. (Amended) An apparatus for reinforcing a catheter for insertion into a body lumen comprising:

C, a non-metal material mandrel for reinforcing said catheter comprising a proximal section and a distal section, said mandrel uniformly tapered from said proximal section to said distal section, and said mandrel being formed by necking at high temperatures such that said proximal section is stiffer than said distal section.

40. (Amended) The apparatus of claim 39 further comprising an inflatable member with a proximal portion and a distal portion wherein said distal section of said mandrel extends past said proximal portion of said inflatable member.

41. (Amended) The apparatus of claim 40 wherein said distal section of said mandrel extends past said distal portion of said inflatable member.

42. (Amended) The apparatus of claim 39 wherein said mandrel is formed by necking at high temperatures and annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section.

43. (Amended) The apparatus of claim 42 wherein said mandrel is formed by taper extruding such that said proximal section is stiffer than said distal section.

44. (Amended) The apparatus of claim 39 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.

45. (Amended) An apparatus for reinforcing a catheter for insertion into a body lumen comprising:

a non-metal material mandrel for reinforcing said catheter comprising a proximal section and a distal section, said mandrel uniformly tapered from said proximal section to said distal section, and said mandrel being formed by annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section.

46. (Amended) The apparatus of claim 45 further comprising an inflatable member with a proximal portion and a distal portion wherein said distal section of said mandrel extends past said proximal portion of said inflatable member.

47. (Amended) The apparatus of claim 46 wherein said distal section of said mandrel extends past said distal portion of said inflatable member.

48. (Amended) The apparatus of claim 45 wherein said mandrel is formed by annealing to induce a higher crystallinity and necking at high temperatures such that said proximal section is stiffer than said distal section.

49. (Amended) The apparatus of claim 48 wherein said mandrel is formed by taper extruding such that said proximal section is stiffer than said distal section.

50. (Amended) The apparatus of claim 45 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.

51. (Amended) An apparatus for reinforcing a catheter for insertion into a body lumen comprising:

a non-metal material mandrel for reinforcing said catheter comprising a proximal section and a distal section, said mandrel uniformly tapered from said proximal section to

said distal section, and said mandrel being formed by taper extruding such that said proximal section is stiffer than said distal section.

52. (Amended) The apparatus of claim 51 further comprising an inflatable member with a proximal portion and a distal portion wherein said distal section of said mandrel extends past said proximal portion of said inflatable member.

53. (Amended) The apparatus of claim 52 wherein said distal section of said mandrel extends past said distal portion of said inflatable member.

54. (Amended) The apparatus of claim 51 wherein said mandrel is formed by taper extruding and necking at high temperatures such that said proximal section is stiffer than said distal section.

55. (Amended) The apparatus of claim 54 wherein said mandrel is formed by annealing to induce a higher crystallinity such that said proximal section is stiffer than said distal section.

56. (Amended) The apparatus of claim 51 wherein a diameter of said proximal section is larger than a diameter of said distal section of said uniformly tapered mandrel.